

REMARKS

Reconsideration is respectfully requested in light of the foregoing Amendment and remarks that follow.

Claims 1 and 3-16 are before the Examiner. Claim 2 has been canceled. The subject matter of claim 2 has been included in claim 1 as amended. Claim 1 has been further amended to include the features disclosed on page 4, last paragraph of the text as originally filed. Claim 10 has been amended to include the features disclosed on page 4, last paragraph of the text as originally filed. Claims 11-16 have been added. New claim 11 consists of features disclosed on page 11, paragraph 30. New claim 12 consists of features disclosed on page 11, paragraph 31. New claims 13 and 14 correspond to claims 11 and 12 but are dependent on claim 10. New claims 15 and 16 consist of features disclosed on page 4, last paragraph.

The invention as now claimed in claims 1 and 10 comprises a picture-capturing unit, an illuminating unit formed of a matrix composed of a plurality of light-emitting diodes and a control unit connected to said matrix and said picture-capturing unit, wherein the control unit enables a pulsed illumination of the matrix and synchronizes the matrix and the picture-capturing unit such that the matrix only emits light during picture-capturing periods of the unit. Accordingly, the matrix only emits light when really a picture is taken and only during this period of time.

The advantage of the invention is that the items advanced on the conveyor are only exposed to light and thereby heat when a picture is taken. This limits exposure to a minimum. Further the use of a matrix of light-emitting diodes also reduces heat production of the illuminating unit. The minimization of heat exposure is extremely important when heat sensitive items such as food products are conveyed, e.g. chocolates and glazed items.

It is known to use conveyor systems for conveying heat sensitive items in a non-oriented and not-organized manner to a picking or storage unit. A vision unit detects these items and

gives an actuating signal to the picking or storage unit so that the item is picked up and placed into packages or organized in the storage unit. However, this vision unit needs illumination which produces heat and impacts the heat sensitive items. Quality of the items is impacted , e.g. partially melted chocolate or glaze. The system according to claims 1 and 10 provides a solution to this problem. Claims 11 to 14 emphasize the preferred use of the system in combination with a storage unit or a gripper. Claims 15 and 16 are directed to detailed embodiments.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Cochran et al. (US 5,172,005, hereinafter referred to as "Cochran"). Applicants respectfully traverse.

Claims 1 and 10 have been amended to distinguish over the teachings of Cochran et al.

While Cochran et al. disclose a lighting system for high speed video which includes a picture-capturing unit (CCD camera 46) and arrays of light emitting diodes (10, 26), the diodes are pulsed (column 4, line 40) and the CCD camera 46 is synchronized with the velocity of the webbing material to be scanned (column 8, line 3). Cochran et al. do not disclose light emitting diodes which operate only when the camera is ready, i.e. the shutter is open. Further, Cochran et al. do not disclose a control unit connected to the matrix and to the picture-capturing unit for a pulsed illumination and synchronization of the matrix so that the matrix only emits light during picture-capturing periods of the picture-capturing unit. Claims 1 and 10, as amended, clearly require this feature.

Also, Cochran et al. do not disclose a control device which controls a gripper or a storage device, wherein the picture capturing unit transmits a signal based on a captured picture to this control device as set forth in the newly added claims 11 to 14. Also, Cochran et al. does not disclose a system where the light-emitting diode is controlled by a shutter control of the picture-capturing device as claimed in claims 15 and 16.

According, since Cochran does not teach each and every element required by the claims as amended, there is no anticipation. Withdrawal of the rejection is respectfully requested.

Also, it is respectfully submitted that it would not have been obvious for a person skilled in the art based on the teachings of Cochran et al. alone, to create the claimed system. Cochran et al. is concerned with a system for inspection of a continuous stream of sheet or web-like material which moves quite fast (column 2, line 38 and column 1, line 49). That clearly is not what is now claimed. Cochran et al., rather, is concerned with how to freeze a picture (for example column 6, line 68-col. 7, line 19) and the storage of the image. There is no disclosure regarding the scanning of heat-sensitive material and how to minimize heating the material and adversely affecting its quality. Cochran et al. is directed to the synchronization of the camera with the web movement and image storage and not with the synchronization of the camera with the light-emitting diodes to minimize heat build-up in a measured product.

The other prior art references cited by the examiner would also not lead to the invention claimed. US 5'365'084 (Cochran et al.) is related to the same problem and the same solution as the reference mentioned above (US'005).

U.S. Patent No. 4,585,947 discloses the analysis of the signals. In column 3, line 25, the patent mentions only that the high speed clock is synchronized with the beginning of the video scan. Further, in column 6, line 18, the patent mentions that a monostable is used to delay gating on the scan start allowing for the filter settling time. Accordingly, it appears that the light emitting diodes are also used when the camera is not ready.

U.S. Patent No. 4,534,470 does disclose an apparatus for processing fruits and the like but does not relate to the synchronization of the camera and the light-emitting diodes as claimed in claims 1 and 10, as amended.

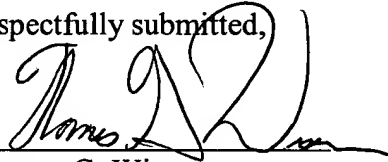
U.S. Patent No. 6,697,154 does disclose a viewing system comprising LED's but does not disclose the synchronization of the camera and the light-emitting diodes as claimed in amended claims 1 and 10.

In view of the foregoing amendments and remarks, the application is believed to be in condition for allowance and a notice to that effect is respectfully requested.

Should the Examiner not find the Application to be in allowable condition or believe that a conference would be of value in expediting the prosecution of the Application, Applicants request that the Examiner telephone undersigned Counsel to discuss the case and afford

Applicants request an opportunity to submit any Supplemental Amendment that might advance prosecution and place the Application in allowable condition.

Respectfully submitted,



Thomas G. Wiseman
(Registration No. 35,046)

VENABLE
Post Office Box 34385
Washington, DC 20043-9998
Telephone: (202)344-4800
Direct dial: 202-344-4614
Telefax : (202) 344-8300

DC2-DOCS1-568430